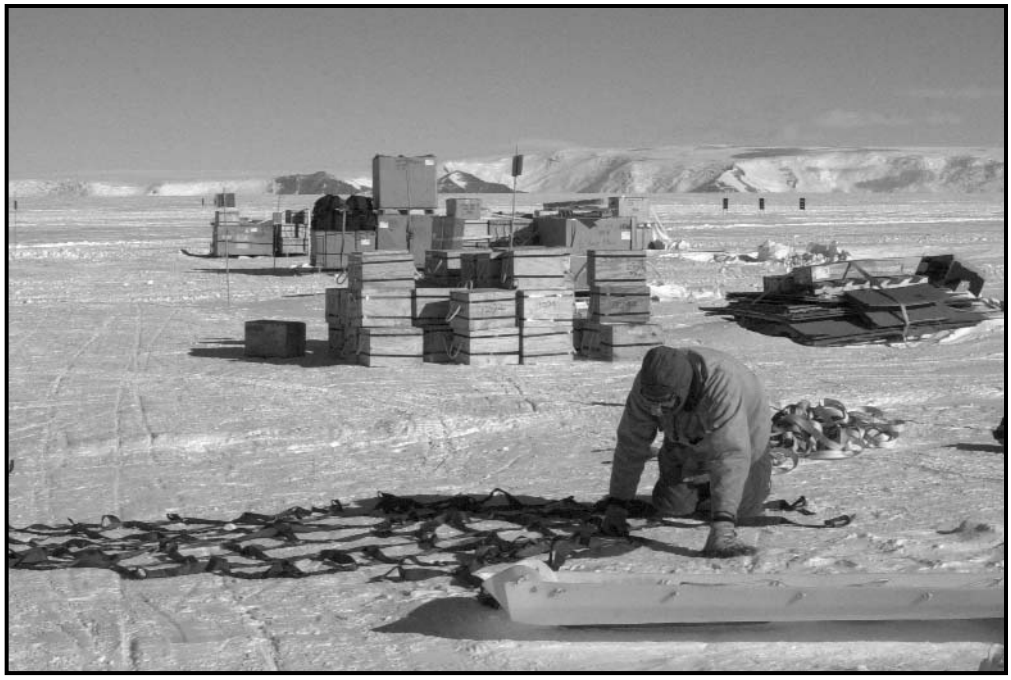
CHAPTER 4:
Conservation, Permits, and Science Cargo



Stacks of wooden boxes filled with fossils and geological samples get ready to be loaded into a cargo net for transport.

Environmental conservation and waste management law applies in the Antarctic. This chapter describes the public law and explains how to get a permit for activities allowed under permit.

The law applies to everyone in the U.S. Antarctic Program—even if you are not a U.S. citizen. It applies to every U.S. citizen—even if you are working with another nation in the Antarctic. It applies to all expeditions to Antarctica that originate from the United States. The import-export part of the law applies to U.S. citizens not in Antarctica, including tourists.

The chapter also discusses the shipment of science cargo, and it explains the permitting rules that apply to cargo—including specimens shipped from the Antarctic.

ANTARCTIC CONSERVATION ACT

The Antarctic Conservation Act (Public Law 95-541) formalizes U.S. adherence to Antarctic Treaty conservation rules, including the 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, the 1991 Protocol on Environmental Protection, and the Antarctic Science, Tourism and Conservation Act of 1996.

The law provides penalties of up to $11,000 and 1 year imprisonment for each violation. Other penalties could include removal from Antarctica, rescission of a grant, or sanctions by your employer. It assigns the National Science Foundation and other agencies regulatory, permit, and enforcement authority.

The Antarctic Conservation Act requires your involvement from the time you begin planning your trip until after you leave Antarctica. Your activities, on the job or off, must comply with the Antarctic Conservation Act. Much of your conservation planning will involve common sense—minimizing pollution, avoiding interference with animals—but the Act is complex, and you cannot rely on unassisted common sense.

Antarctic Conservation Act of 1978 *(NSF 01-151).* This book contains the law, its regulations, maps of special areas, the Protocol on Environmental Protection and a permit application form. Read more about the Antarctic Conservation Act on the ***NSF web site*** at www.nsf.gov and conduct a search for "ACA."

Do Not Disturb Wildlife.

If they are reacting to you, then you are too close.

Highlights of the Antarctic Conservation Act

Environmental Impact Assessment. Proposed activities shall be subject to environmental assessment of impacts of those activities on the antarctic environment, or on dependent or associated ecosystems.

If an activity has less than a minor or transitory impact, the activity may proceed. Otherwise, an environmental assessment must be completed, according to Annex 1 of the Protocol on Environmental Protection to the Antarctic Treaty. Parties planning the activity are responsible to ensure that the assessment procedures set out in Annex 1 are applied in the planning processes leading to decisions about any activities undertaken in the Antarctic Treaty area. An Initial Environmental Evaluation, or a Comprehensive Environmental Evaluation, of the activity may be required and must be signed by the National Science Foundation before the activity can begin.

Taking or harmful interference are prohibited except under a permit that specifies the authorized activity, including when, where, and by whom it is to be conducted. Permits are issued only to provide specimens for scientific study or for museums or other educational institutions. NSF evaluates requests for permits and issues them when approved.

"Taking" means—

- to kill, injure, capture, handle, or molest a native mammal or bird, or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected.

"Harmful interference" means—

i. flying or landing helicopters or other aircraft in a manner that disturbs concentrations of birds and seals
ii. using vehicles or vessels, including hovercraft and small boats, in a manner that disturbs concentrations of birds and seals
iii. using explosives or firearms in a manner that disturbs concentrations of birds and seals
iv. willfully disturbing breeding or molting birds or concentrations of birds and seals by persons on foot
v. significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, walking on them, or by other means
vi. any activity that results in the significant adverse modification of habitats of any species or population of native mammal, bird, plant, or invertebrate

Special areas. A number of precisely defined places in Antarctica are designated under the Antarctic Treaty, and in the U.S. law, as Antarctic Specially Protected Areas (ASPAs), formerly referred to as SPAs and SSSIs. You must have a compelling need to enter one of these areas, and you must have a permit to do so.

Some of these special areas are near stations, such as Arrival Heights next to McMurdo or Litchfield Island near Palmer. Other special areas like the Barwick Valley are in remote locations in which geologists, for example, may need to work. The areas and their management plans, with which you must comply if you are permitted to enter, are described in the publication *Antarctic Conservation Act of 1978* (NSF 01-151), free from NSF and on the web site listed above.

An additional category, Antarctic Specially Managed Areas (ASMAs), may be created for areas where activities pose risks of mutual interference or cumulative environmental impacts, and for sites of recognized historic value that do not require strictly controlled access. Entry into an ASMA will not require a permit.

Introducing species. You need a permit to introduce nonindigenous species to the Antarctic (that is, south of 60°S latitude). A clear need to introduce the items must be demonstrated. Only

the following may be considered for a permit allowing their introduction:

a) domestic plants

b) laboratory animals and plants including viruses, bacteria, yeasts, and fungi

The Act allows food plants, but introduced soil must be sterile. Many antarctic stations have hydroponic vegetable gardens.

Living nonindigenous species of birds may not be introduced into Antarctica. Section 670.18 of the Antarctic Conservation Act lists antarctic native birds.

If you are uncertain if the species you need to take to Antarctica would be an introduced species, contact the Antarctic Biology and Medicine Program Officer at the Office of Polar Programs, NSF (nkennedy@nsf.gov).

If you try to maneuver a Weddell seal into position for a photograph, you are breaking the law.
You must have a permit to enter a special area.

Import into and export from the U.S. In the United States it is unlawful, unless authorized by regulation or permit, to have or sell, or to import or export, antarctic plants, antarctic mammals, or antarctic birds. An application for a permit must demonstrate that the import or export would further the purposes for which the species was taken or collected, demonstrate that the import or export is consistent with the purposes of the Antarctic Conservation Act, and state which U.S. port will be used.

Mailing items to or from the United States constitutes import or export.

Banned substances. The Antarctic Conservation Act waste management regulations bans these substances from Antarctica:

- pesticides (except those required for science or hygiene: a permit is needed)
- polychlorinated biphenyls (PCBs)
- nonsterile soil
- polystyrene beads and plastic chips

REPORT ALL SPILLS

- You are required to report any spill that takes place, no matter how small.
- If you can safely clean it up yourself, do so, but still report it.
- In McMurdo, call the Fire House at 2550 for non-emergencies or 911 for an emergency.
- At the South Pole, contact the EHS coordinator.
- If you accidentally spill, you won't be legally prosecuted, but if you don't report it you could be.

Designated pollutants. The Act identifies some substances as designated pollutants that must be used, stored, and disposed of in a way that prevents their release to or adverse impact on the environment.

This category is large and requires attention both when you pack for travel to Antarctica and at your work site and living area. When packing, think about how to minimize the types and amounts of substances you need, to substitute benign substances for designated pollutants wherever possible, and to handle the designated pollutants that you must take.

Designated pollutants include any substance listed by name or characteristic (flammable, corrosive, reactive, toxic) in the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and other U.S. regulations. Waste containing designated pollutants is antarctic hazardous waste, and it has to be used, stored, and disposed of in controlled ways.

Many research and industrial supplies—and common substances like lighter fluid and fingernail polish remover—at U.S. antarctic stations are designated pollutants. All of them must have a permit to enter Antarctica. The support contractor annually completes the actions needed to request a permit; the task requires the cooperation of all program participants. This chore and others are part of the work involved in preparing for Antarctica.

Historic sites. More than 70 historic monuments or sites have been identified during Antarctic Treaty consultative meetings. Appendix C lists them. Steps are taken to restore and preserve monuments including tombs, buildings, and objects of historic interest. The concerned governments protect these sites from damage. If you go near historic sites, please take care not to damage or disturb them.

McMurdo has four Antarctic Treaty historic sites: Observation Hill, Scott's Hut, Vince's Cross,

and the Richard E. Byrd Memorial. Two other monuments are accorded historic status by the U.S. Antarctic Program: Our Lady of the Snows Shrine, which was established in memory of Richard Thomas Williams, a Navy Seabee who drowned when his tractor broke through the sea ice in January 1956, and the Raymond Smith Monument, which commemorates BM1 Raymond Thomas Smith, USN, who died in 1982 during an unloading accident at McMurdo onboard *USNS Southern Cross.*

NSF will not allow work in Antarctica until a permit has been either approved or found not to be required… copies of ACA permits must be on file at NSF.

South Pole has one Antarctic Treaty historic site: Flag Mast, which was erected in 1956 and has not been seen for many years. Its exact location is not known.

Capes Royds, Evans, and Adare contain historic huts or their remains. Respect the basic rule prohibiting the removal or disturbance of any materials from these sites, for either souvenir or scientific purposes.

Enforcement officers. Antarctic Conservation Act Enforcement Officers are federal officials responsible for ensuring compliance with the Antarctic Conservation Act and for permits issued to U.S. citizens or foreign nationals in the U.S.

Enforcement Officers help U.S. Antarctic Program participants understand their obligations to protect native plants and animals and to prevent the release of pollutants.

They are authorized to review permits to ensure terms and conditions are fulfilled; serve warrants; search and seize property without warrant; take affidavit; detain for inspection and inspect packages, crates, or other containers; and make an arrest with or without a warrant.

GETTING ACA PERMITS AND REPORTING

NSF will not allow work in Antarctica until a permit has been either approved or found not to be required. You may not do things that require a permit unless you have a permit. A permit cannot be retroactive.

You are the person who initially decides whether or not an Antarctic Conservation Act (ACA) permit will be needed for proposed activities in Antarctica. If there is any doubt, contact the Office of Polar Programs Permit Office (Nadene Kennedy, nkennedy@nsf.gov).

Permit Officer
Office of Polar Programs, Room 755
National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230 703-292-9080 fax

Normally, at least 65 days are required for NSF to review and decide on an ACA permit. During that time, a summary of the application is published in the Federal Register so that the public can comment. The Foundation evaluates public comments and performs an internal review. It then approves the application, approves it with modifications, or disapproves it.

Postseason report. At the end of the season, write a 1-page report of activities conducted under your ACA permit and submit it to the Permit Officer, Office of Polar Programs. If you collected birds or mammals, complete an "Annual return of species killed or captured" form available from the Permit Officer.

NOTE: If your project involves any native mammal that is a marine mammal as defined by the Marine Mammal Protection Act of 1972 (16 U.S.C. 1362(5)), any species that is an endangered or threatened species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), or any native bird that is protected under the Migratory Act (16 U.S.C. 701 et seq.), you may need to obtain permits from other Federal agencies. NSF cannot issue an Antarctic Conservation Act permit until the Permit Office receives copies of valid permits issued under these regulations. The following website provides information on the acts listed above: http://www.nmfs.noaa.gov/prot_res/overview/permits.html.

OTHER IMPORT-EXPORT REGULATIONS U.S. & FOREIGN

Federal laws and regulations control the taking and importing into the U.S. of certain biological specimens, alive or dead. Other countries have rules for crossing their borders with some materials.

Responsibility for knowing these regulations, complying with restrictions, and obtaining clearances rests with the grantee. Keep your RPSC Science Support point-of-contact informed by sending copies of relevant correspondence, of action taken and permits granted.

The NSF Representative, Antarctica, cannot provide the needed clearances from the field. It is your responsibility to obtain the necessary permits.

Import of animal-origin materials. The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), regulates the import of all animal-origin materials that could be a disease risk to U.S. livestock. Animal-origin materials include animal products, animal byproducts, and biological materials that contain or have been in contact with materials of animal origin (including cell cultures).

You may not bring such materials into the country without a permit. Permits may be requested on VS Form 16-3, "Application to Import Controlled Material or Organisms and Vectors." If you want to import cell cultures, you also need VS Form 16-7, "Additional Information for Cell Cultures and their Products." Forms can be obtained from the address below. A copy of the forms you submit should be sent to your RPSC Science Support point-of-contact.

USDA, APHIS, VS
Import-Export Products Staff
Room 756, Federal Building — 301-927-8357 (tel.)
6505 Belcrest Road — 301-436-8695 (tel.)
Hyattsville, Maryland 20782 — 301-436-8226 (fax)

User fees apply for the following services:

Process application forms VS 16-3 and VS 16-7	$26.50
Renewal of permit	$14.50
Amendment of permit	$11.00
Release assistance from agricultural hold	$22.75

Payment may be by cash, check, money order, credit card (Visa or MasterCard), or user fee credit account. To establish a credit account call the USDA, Field Servicing Office, Minneapolis, Minnesota, 612-370-2075, for an application.

Foreign permit restrictions. All countries have some restrictions against the importation of harmful plants or animals or of soil samples that might contain harmful seeds, insects, fungi, or bacteria. New Zealand has particularly stringent regulations (see below), and Argentina and Chile have similar rules. Chile does not currently restrict transshipment of specimens or technical equipment. For general information about materials sent by mail or shipped as retrograde cargo to the U.S., contact the embassies of the respective countries for information and permit applications before you leave the U.S. Otherwise, there may be difficulty in clearing customs, particularly when hand carrying biological samples.

For information, write to the representative of the country through which you or the specimens will pass:

Ministry of Agriculture and Forestry
P.O. Box 2526
Wellington, New Zealand

Chilean Embassy
1736 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Argentine Embassy
1600 New Hampshire Avenue, N.W.
Washington, D.C. 20009

To keep the National Science Foundation informed of your action, please forward information copies of correspondence to your RPSC Science Support point-of-contact.

New Zealand health and agricultural requirements. New Zealand has strict regulations regarding importation of biological and other materials. A *Permit to Import* or a *Permit to Transship* is essential for entry of biological samples and other materials into New Zealand - from either the U.S. or Antarctica. By entering permit information into POLAR ICE (the online application submitted by scientists), an application to the New Zealand Ministry of Agriculture and Forestry (MAF) is automatically generated. The participant must print this application and fax it to the Christchurch office of Raytheon Polar Services (NZ), Ltd. **Fax to: 011.643.358.9060, Attention: Admin. Coordinator Senior**. The application form is processed and a *Permit to Import* or *Permit to Transship* is issued and sent to the participant. Applications that miss the cut off date for POLAR ICE must be processed as described below.

Apply for all permits at least **8 weeks** before you leave the U.S. for Antarctica. All permits may be used for one entry only and only by the person to whom the permit was issued. Thus each team member expecting to transport materials to or through New Zealand should make a separate application. Application forms can be obtained through your RPSC Science Support point-of-contact and are included in the Support Information Package (SIP).

A *Permit to Import* any of the following items into New Zealand from the U.S. en route to Antarctica must be obtained before your departure from the U.S. (Form A): human tissue; animal tissue, parts, or byproducts; vaccines or cultures; restricted drugs or chemicals; plants or plant byproducts; insects; mites; or seeds. A *Permit to Import* biological samples and all other materials into New Zealand from Antarctica (terminating in New Zealand) must be obtained before your departure from the U.S. (form B).

A *Permit to Transship* biological samples and all other materials from Antarctica through New Zealand en route to your ultimate destination must be obtained before your departure from the U.S. (Form C). All completed application forms for importation or transshipment should be addressed to:

Admin. Coordinator Senior
c/o US Air Post Office
Private Bag 4747
Christchurch, New Zealand

MAFpermit@iac.org.nz

If the request is approved, a *Permit to Import* or *Permit to Transship* will be sent by the NSF Contractor Representative, New Zealand. This original documentation must be in your possession at the point of entry into New Zealand (or attached to the #1 box containing your samples). You will need to produce the permit to the MAF border officials who will issue a Biosecurity Authorization/Clearance certificate which stipulates the terms of the sample's entry/transshipment through New Zealand.

Requests for importation relating to human health should be addressed to:

Director General
Ministry of Health
P.O. Box 5013
Wellington, New Zealand

Shipping biological materials from Antarctica. To assure the satisfactory and safe shipment of biological specimens from Antarctica, give details of the shipment in writing to Crary Laboratory and Science Cargo Staff if you are working out of McMurdo Station. If you are working in the Antarctic Peninsula area, get transport details from the NSF Representative Antarctic Peninsula, the RPSC Resident Manager at Palmer, or the Marine Projects Coordinator on your research vessel.

You will be required to identify the container as to content, relevant permits, special handling requirements (such as dry ice), and addressees. State whether the container will be hand carried or shipped independent of the investigator.

Radioactive Materials

Use of radioactive materials in Antarctica requires strict adherence to U.S. Antarctic policies and procedures to avoid contaminating the antarctic environment and to ensure safety. Approval by the NSF/OPP to use radioisotopes in the Antarctic must be obtained before any radioactive material is shipped south. Principal Investigators must request this permission through the Support Information Package (SIP) or by contacting their RPSC point-of-contact. Failure to do so may result in delay of shipment receipts for the project or in return of the shipment to the vendor or home institution. In addition, the Antarctic Treaty prohibits the disposal of radioactive waste in Antarctica. The Marine Protection Research and Sanctuaries Act (the "Ocean Dumping" act) prohibits disposal of radioactive materials in the ocean unless authorized by EPA permit.

Responsibility for the use of radioactive materials in Antarctica rests with the principal investigator. This responsibility cannot be delegated. Improper use, control, or documentation by anyone in the investigator's project will jeopardize the investigator's future use of isotopes in the Antarctic. Procurement and shipment of isotopes is the responsibility of the principal investigator through a university license. The university's Radiation Safety Officer is required to document that those using isotopes are included on the license. RPSC monitors procurement of the radioactive materials so that it can assist in assuring proper shipping methods. Hand carriage of radioactive materials to and from Antarctica is not allowed.

On arrival in Antarctica, isotopes are stored under the control of the Laboratory Manager or the Marine Projects Coordinator except when in actual use. The U.S. Antarctic Program has established a mechanism for proper disposal of low-level radioactive waste generated in Antarctica and will provide the home institution's radiation safety office documentation to that effect.

Shipping radioisotopes through New Zealand. Radioactive isotopes cannot be shipped to New Zealand without a Certificate of Authorization to Import Radioactive Materials. The NSF Contractor Representative, New Zealand, is not an approved agency to obtain this certificate. An RPSC agent in Auckland, Nuclear Supplies, Ltd., handles the paperwork, including clearing the shipment through New Zealand Customs, Ministry of Agriculture, and the National Radiation Laboratory. Often U.S. vendors consolidate antarctic science shipments with other orders destined for New Zealand hospitals and laboratories, via Nuclear Supplies, Ltd.

If you plan to order and ship radioisotopes directly from U.S. vendors to New Zealand, adhere to these instructions:

1. Order through one of these three vendors:
   - American Radio Labeled Chemicals
   - ICN Bio Medicals (Nuclear Supplies, Ltd. are sole New Zealand agents for these vendors)
   - DuPont/NEN (Nuclear Supplies, Ltd. are not New Zealand agents for this vendor but have permission to accept consolidated shipments from this vendor)
2. All orders must be marked by the vendor for "NSF Christchurch, New Zealand, via Nuclear Supplies Ltd., Auckland, NZ." Your project's Science Event Number (SEN) number and name of Principal Investigator (PI) must also be included in the shipping instructions so that the NSF Contractor Representative, New Zealand, will know to whom to consign the shipment in Antarctica.
3. After the order is placed with the vendor, send the NSF Contractor Representative, New Zealand, either an e-mail (NSFREPNZ@iac.org.nz) or fax (011-643-358-9060) with details of the order including the vendor used, purchase order number, list of radioisotopes ordered and their activity, an air waybill number for the shipment, and date that shipment is expected to depart the U.S. and arrive in Auckland, New Zealand.

Upon receipt in Christchurch, the NSF Contractor Representative, New Zealand, ensures that the shipment is consigned to the PI at a station in Antarctica or aboard a U.S. Antarctic Program vessel at Port Lyttelton.

If you cannot order the required item from the vendors listed in paragraph 1 above, notify the

NSF Contractor Representative, New Zealand, who will coordinate with New Zealand authorities to obtain a permit on your behalf prior to shipment. Contact the NSF Contractor Representative, New Zealand, with any questions.

SCIENCE CARGO

Many dollars have gone into the support of each science project and the facilities required for the projects. Data and their subsequent interpretation are the greatest single return on this investment. Data and specimens should be transported with the same care and forethought that went into planning the research.

The challenges presented in transporting cargo and passengers to and from Antarctica are diverse. Antarctic operations are divided roughly into two geographic areas, the Continental and the Peninsula Areas, differentiated by the stations and the means of supplying those stations.

The *Support Information Package* (SIP) is distributed to science teams and provides information on due dates, limitations, restrictions, etc.

Instructions on Packaging and Shipping, provided by RPSC, explains exactly how to package and ship your science cargo to and from Antarctica. This publication is kept current with recent methods of safe and damage-free shipping, examples of how to time your shipments, and the current name, address and phone of the Port Hueneme representatives.

You can find this information online at http://www.usap.gov.

Sea and Air

Due to the unusual restrictions presented in getting cargo to Antarctica, requirements are analyzed and cargo loads are planned months in advance. Planning begins with information gathered from the Support Information Package (SIP) and RPSC Management.

- ✓ It typically costs twenty to thirty times more to fly items than to ship them via vessel.
- ✓ Many times air transport costs exceed the cost of the actual item being transported.
- ✓ Lack of planning results in excessive transport costs.

Responsibility for cargo and passenger movement within the Continental Area, rests with the RPSC Director of Logistics and the RPSC Manager of Terminal Operations (ATO). During the summer season at McMurdo, RPSC's Terminal Operations department manages all cargo transported to McMurdo Station and onward.

U.S. Antarctic Program/Science Cargo is the facility that focuses on the cargo related to **science** efforts, special S- or T-events, and hazardous cargo. At McMurdo Station, cargo is documented, packaged, and labeled for transport and then turned over to the Movement Control Center (MCC) staff for actual transport. All hazardous cargo to be transported via helicopter is also processed through the U.S. Antarctic Program Science Cargo office. Should you require assistance in determining the whereabouts of cargo you have shipped, these people can tell where in the U.S. Antarctic Program cargo system your particular cargo is located. It will assist them if you can provide a copy of the U.S. Antarctic Program Shipping Document, or, for commercial shipments, a copy of the bill of lading or airway bill.

Methods of cargo transport used each year in support of science are:

Palmer Station via research vessels. Cargo must reach the NSF Contractor Representative in Port Hueneme, California, at least 90 days before it is to be loaded aboard the research vessel in Punta Arenas, Chile, for forwarding to Antarctica.

McMurdo Station via charter resupply vessel. A U.S. flag charter ship goes from Port Hueneme to McMurdo Station, arriving in early February. Cargo for this ship must be received in Port Hueneme, California, by 1 December. This ship is the preferred transport for delivering materials to McMurdo and the inland stations. Plan to get as much of your cargo as possible on it.

McMurdo Station via kilo-air. For material that cannot be sent to McMurdo on the resupply ship the year before, use 'kilo-air cargo.' Kilo-air cargo is sent by commercial ship from Port Hueneme, California, and arrives in Port Lyttelton (near Christchurch), New Zealand, in September. Cargo is flown from there to McMurdo. Kilo-air cargo needs to

arrive at Port Hueneme by 30 August.

Commercial air cargo. If circumstances prohibit shipment by sea, you may be authorized to use air cargo. This is the most expensive way to ship and will be used only for essential material that cannot go by sea. Air cargo will not be authorized as a substitute for proper advance planning of material movements.

Scientists working at Lake Hoare in the Dry Valleys must bring all their equipment with them to live and conduct research for several months.

South Pole Station cargo. Cargo to/from South Pole Station is transported entirely by LC-130 aircraft from McMurdo Station. These aircraft operate only from late October through mid-February. The station is isolated the rest of the year. RPSC Science Cargo personnel in McMurdo and at South Pole determine cargo plans and schedules.

Hazardous cargo. Explosives, gases, flammables, oxidizers, poisons, radioactives, corrosives, and other hazardous materials are forbidden in baggage and mail and must be shipped as cargo. Hazardous cargo must be packaged, labeled, marked, and documented in accordance with the applicable federal, international, military, and U.S. Antarctic Program regulations. Contact the RPSC Hazardous Cargo Specialist for more information.

Emphasis on sea cargo. The U.S. Antarctic Program is committed to maximum practical use of sea cargo—and to minimum use of air cargo, which is vastly more expensive. Shipping by sea is the preferred method for transporting grantee and other materials to Antarctica. It is far cheaper than air cargo and it is secure. Once your cargo is packed and labeled properly and on the ship (except the 'kilo-air' ship), the next offload stop is McMurdo Station. The ship also can be used to return gear and specimens to the U.S.

Maximum use of sea transportation is possible only through planning by all concerned. Make every effort to allow sufficient time for shipment by sea. Plan to position cargo in Antarctica the season before field work.

Retrograde (Return) Science Cargo

Near the end of your stay in Antarctica, you will arrange to have your science cargo shipped to the U.S. with the U.S. Antarctic Program Cargo representative at McMurdo Station or cargo personnel at Palmer or South Pole Stations. This person will issue you the appropriate documents and accept the cargo for shipment. You are responsible for insuring, packing, and crating the equipment, and for labeling the containers.

Use of ship, rather than air, cargo back to the States, especially from McMurdo, is encouraged when the science will not be compromised by the slower delivery. Air cargo will be authorized when necessary.

Retrograde cargo is shipped to a U.S. entry point and onward to its ultimate destination. The grantee pays shipping costs from the U.S. entry point to the ultimate destination. Note that it is the shipper's responsibility to insure cargo against loss.

You are entirely responsible for any items you mail or handcarry. All retrograde cargo will go by ship unless air shipment is fully justified and authorized by the NSF Representative or designate at Palmer Station, or the NSF Representative at McMurdo Station.

Refer to Chapter 6 for information on transporting personal cargo and boxes. ■